

Title	Describe the purpose and application of cathodic protection in an energy and chemical plant		
Level	4	Credits	2

Purpose	People credited with this unit standard are able to describe the purpose and application of cathodic protection in an energy and chemical plant.
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Classification	Energy and Chemical Plant > Monitoring of Energy and Chemical Plant
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Available grade	Achieved
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Guidance Information

- 1 Legislation relevant to this unit standard includes but is not limited to:
 - Health and Safety at Work Act 2015;
 - Hazardous Substances and New Organisms Act 1996;
 - Resource Management Act 1991;
 - and any subsequent amendments.

- 2 Definitions

Energy and chemical plant may be in – petrochemical, agri-nutrient, power generation, dairy processing, meat processing, and wood fibre manufacturing, or other plants that operate with a combination of high temperatures, pressures, steam and/or chemicals in gas, liquid or solid form.

Holiday detection refers to non-destructive testing for locating discontinuities, pinholes, and voids in surface and pipeline coatings.

Organisational requirements – documented policies and procedures. These may include: equipment manufacturers' procedures; plant procedures; suppliers' instructions; site signage; codes of practice; company health and safety plans; on site briefings; and supervisor's instructions. This includes all regulatory and legislative obligations that apply to the plant.

Plant – the operational unit, equipment, and/or workplace at which the person is working.

- 3 For the purposes of assessment:
 - evidence of all outcomes must be presented in accordance with organisational requirements.

Outcomes and performance criteria

Outcome 1

Describe the purpose and application of cathodic protection in the energy and chemical plant.

Performance criteria

- 1.1 Describe cathodic protection in terms of its purpose and use.
- 1.2 Describe cathodic protection in terms of the reasons for the regular survey of cathodic protection systems.
- 1.3 Describe cathodic protection in terms of the different protection system corrosion prevention techniques available.
- Range galvanic, impressed current.
- 1.4 Describe the causes of corrosion in an energy and chemical plant that may require cathodic protection.
- 1.5 Describe the survey of a cathodic protection system by a Holiday detection monitor.
- 1.6 Describe cathodic protection in terms of which international cathodic protection standards are applied in an energy and chemical plant.
- 1.7 Describe the purpose of cathodic protection system equipment in an energy and chemical plant.
- Range impressed current rectifier, anode beds, galvanic anodes, test points, corrosion coupons, flange insulation kit.
- 1.8 Describe cathodic protection in terms of the typical voltage range of an operating cathodic protection system operating in an energy and chemical plant.
- 1.9 Describe the cathodic protection survey equipment in terms of its purpose.
- Range copper sulphate half-cell, multi-meter, data logger, cathodic protection system interruption device, direct current voltage gradient (DCVG) meter, pipe locator, flange isolation tester, current measuring swain clamps.

Planned review date	31 December 2025
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	6 February 1997	31 December 2018
Revision	2	3 August 2000	31 December 2018
Review	3	24 January 2002	31 December 2018
Review	4	20 February 2009	31 December 2018
Rollover and Revision	5	20 April 2017	31 December 2022
Review	6	27 February 2020	N/A

Consent and Moderation Requirements (CMR) reference

0079

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact the Primary Industry Training Organisation standards@primaryito.ac.nz if you wish to suggest changes to the content of this unit standard.